

**PRINTER MEDIA TRAY AND
METHOD OF USING SAME****BACKGROUND OF THE INVENTION**

The present invention relates generally to inkjet printers and, more
10 particularly, to print media trays utilized in such printers.

Printers of various types are virtually universally known. They are
operated daily in thousands of business organizations, university campuses
and homes. Many such printers utilize a front-loading print media
input/output tray. Often, the tray projects from the printer housing,
15 thereby increasing the space, or footprint, occupied by the printer. Such an
increased footprint may be tolerable during periods of printer operation but
can present problems during times of printer non-operation.

In this regard, packaging and shipping costs are sometimes increased
because of the additional space occupied by the forward projecting tray. In
20 addition, increased costs are realized by wholesalers and retailers in the
form of increased shelf space. Of course, the large footprint is inconvenient
for the printer user because of the space occupied by the projecting tray
during periods of printer non-operation.

The above limitations have been recognized and attempts have been
25 made to mitigate them. In some cases, the printer and media tray are
packaged and shipped separately in an attempt to reduce container size.
While this technique can lead to some space savings, it introduces the

5 disadvantage of requiring assembly of the printer before operation and in addition, runs the risk of the tray getting lost in the process.

In view of the foregoing, it would be desirable to have a printer and print media tray combination having a reduced footprint relative to that of conventional printers without a need to separate the printer and tray during 10 periods of non-operation. Desirably, such a combination would enable reduced packaging and shipping costs while increasing value to the user by reducing product footprint during non-operation periods.

DISCLOSURE OF THE INVENTION

According to the present invention, there is provided a printer having 15 a housing, including a bottom wall, a front wall, and a cover pivotally attached to the housing and rotatable between an open and a closed position. A tray is provided for supporting print media from below wherein the tray is pivotally attached to the housing for movement between a printer operational position and a printer non-operational position, wherein the tray 20 is disposed between the cover and the front wall when the tray is in the printer non-operational position.

The present invention affords several advantages. Conservation of valuable shipping and shelf space is achieved. In addition, flexibility of print media tray length can be realized so that a variety of differing media sizes 25 may be utilized by the printer. In addition, when the tray is positioned inside the cover the tray functions as a compression member to support the

5 printer structurally during bulk-pack and as a carriage restraint during
shipping.

Other aspects and advantages of the present invention will become
apparent from the following detailed description, taken in conjunction with
the accompanying drawings, illustrating by way of example the principles of
10 the invention.

BRIEF DESCRIPTION OF DRAWINGS

FIG. 1 is a front elevational view of a printer that is constructed
according to the present invention;

15 FIG. 2 is a front elevational view of the printer of FIG. 1 showing the
cover in a partially raised position;

FIG. 3 is a front elevational view of the printer of FIG. 1 showing the
cover in a fully raised position;

FIG. 4 is a front elevational view of the printer of FIG. 1 showing the
20 position of the cover as the print media tray is being moved into the printer
operational position; and

FIG. 5 is a front elevational view of the printer of FIG. 1 showing the
cover closed and the print media tray in the printer operational position.

BEST MODE FOR CARRYING OUT THE INVENTION

25 The present invention may be embodied in other specific forms
without departing from its spirit or essential characteristics. The described

5 embodiment is to be considered in all respects only as illustrative and not
restrictive. The scope of the invention is, therefore, indicated by the
appended claims rather than by the foregoing description. All changes
which come within the meaning and range of equivalency of the claims are
to be embraced within their scope.

10 In the following detailed description and in the several figures of the
drawings, like elements are identified with like reference numerals.

Referring now to the drawings, there is shown a novel printer 10 that
is constructed according to the present invention. The printer 10 includes a
15 housing 15 having top wall 20, a front wall 12 and a bottom wall 18. A
cover 14 is pivotally attached to the top wall 20 for rotation into a printer
operational position or into a printer non-operational position. A print
media tray 13, mounted on the front wall for rotatable movement, also
moves into and out of a printer operational position and a printer non-
operational position.

20 The printer non-operational position is shown in FIG. 1. In this case,
the printer is closed up with the cover 14 overlying the print media tray 13.
In this configuration, the printer 10 occupies a compact footprint that
conserves packaging and space during shipment while the tray 13 acts as a
compression member to support the printer structurally. At its destination,
25 of course, the compact package presented by the printer 10 results in a

5 smaller product footprint on the user's desk, as compared to conventional printers.

In converting the printer 10 from a non-operational position to an operational position, the steps shown in FIGS. 2 – 4 are followed. First, the cover 14 is grasped at a finger engageable tab 16 or 17 and the cover 14 is 10 rotated upwardly, as shown generally by the arrow A. With the cover 14 fully rotated, the tray 13 can be grasped at a flat tray body 21 which is then rotated in a manner shown generally by the arrow B. It will be noted that in rotating from the non-operational position to the operational position, the tray 13 moves from a substantially perpendicular relationship to the plane 15 of the bottom wall 18, to a substantially parallel relationship therewith.

As best shown in FIGS. 4 and 5, the tray 13 includes a flat body portion 21 having short sidewalls 24 and 25 for aiding in positioning the print media (not shown) during printer 10 operation. A tray extension 23, pivotally attached to the upper surface of the tray body 21, enables the tray 20 13 to support print media having a variety of lengths. An arcuate cutout 31 in the extension 23 aids the user in adding to, or removing print media from, the tray 13. Attaching means, such as a hinge pin 28 extending through an opening 27 formed in the tray sidewall 24, fix the tray 13 to a side surface 19 of the front wall 12 to enable rotatable movement of the tray 13.

25 It will be evident that there are additional embodiments and applications which are not disclosed in the detailed description but which

5 clearly fall within the scope of the present invention. The specification is, therefore, intended not to be limiting, and the scope of the invention is to be limited only by the following claims.

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